Gunter, Jason

From: Nations, Mark [mnations@doerun.com]
Sent: Thursday, September 12, 2013 9:28 AM
To: Gunter, Jason
Cc: England, Jason; Yingling, Mark; Wohl, Matthew; robert.hinkson@dnr.mo.gov; Ty Morris (TMorris@barr.com)
Subject: Rivermines progress report
Attachments: RM 08-13 (2).doc; August Rivermines Pilot Test Samples.pdf; 2013-08-21 RM NPDES Pace Lab Report.pdf

Jason,
Attached is the August progress report.
Mark

THE DOE RUN COMPANY

Remediation Group

Mark Nations
Mining Properties Manager
mnations@doerun.com

September 10, 2013

Mr. Jason Gunter
Remedial Project Manager
U.S. Environmental Protection Agency
Region 7 - Superfund Branch
11201 Renner Blvd.
Lenexa, KS 66219

Re: The Doe Run Company – Elvins/Rivermines Mine Tailings Site Monthly Progress Report

Dear Mr. Gunter:

As required by Article VI, Section 56 of the Unilateral Administrative Order (UAO) (CERCLA-07-2005-0169) for the referenced project and on behalf of The Doe Run Company, the progress report for the period August 1, 2013 through August 31, 2013 is enclosed. If you have any questions or comments, please call me at 573-518-0800.

Sincerely,

Mark Nations
Mining Properties Manager

Enclosures
c: Jason England – TDRC
Mark Yingling – TDRC (electronic only)
Matt Wohl – TDRC (electronic only)
Robert Hinkson – MDNR
Ty Morris – Barr Engineering

Elvins/Rivermines Mine Tailings Site
Park Hills, Missouri
Removal Action - Monthly Progress Report
Period: August 1, 2013 – August 31, 2013

1. **Actions Performed and Problems Encountered This Period:**

   a. Between the dates of August 1, 2013 and August 14, 2013, flow through the pilot test was directed in two separate configurations. In the first flow configuration, water from the seepage pond passed through the roughing filter and discharged through the bypass pipe. In the second configuration, flow from the seepage pond passed through the iron filter and discharged into the round tank, after which it discharged from the round tank directly into the effluent channel. Between the dates of August 14, 2013 and August 21, 2013, flow through the polishing filter was interrupted due to a pipe malfunction (flow through the roughing filter continued). Flow through the polishing filter was continued on August 21, 2013, and flow through both configurations continued through the end of the period.

   b. A pipe malfunction caused the roughing filter (pool) to overflow between the dates of August 7, 2013 and August 21, 2013. No flow rate measurements through the system were taken at this time due to the malfunction.

   c. Continued to take analytical samples from the pilot test one to three times a week. Samples were taken from the roughing filter effluent (RMP-Rough), the ZVI filter effluent (RMP-Polish), and the final sand filter (RMP-Effluent). Some samples were periodically missed due to conditions of the pilot test.

   d. Continued to take analytical samples from the seep pond effluent and the western treatment pond effluent to monitor the metals reduction of the treatment pond.

   e. Flow through the seepage ponds was measured at approximately 260 gallons per minute on August 6, 2013, and approximately 254 gallons per minute on August 28, 2013. This is significantly less than flow rates measured in the previous period, which exceeded 300 gallons per minute. However, flow continues to be more than the 100 to 200 gallons per minute that is typically observed in the system.

   f. Flow to the east treatment cell was turned off in the previous period and remained off throughout this period.

2. **Analytical Data and Results Received This Period:**

   a. Dissolved zinc concentrations in the polishing filter effluent ranged between 29.40 mg/L and 34.54 mg/L. Dissolved zinc concentrations in the roughing filter effluent ranged between 0.01 mg/L and 7.88 mg/L.

   b. Total zinc concentrations in the polishing filter effluent ranged between 29.58 mg/L and 39.77 mg/L. Total zinc concentrations in the roughing filter effluent ranged between 1.09 mg/L and 8.52 mg/L.

   c. Total iron concentrations in the polishing filter effluent ranged between 0.06 mg/L and 0.16 mg/L. Total iron concentrations in the roughing filter effluent ranged between 0.54 mg/L and 0.92 mg/L.

   d. Total suspended solids concentrations in the polishing filter effluent ranged between non-detect and 7.0 mg/L during the period.

   e. During this period, water samples were collected from just upstream of Old Missouri Highway 32, as well as from upstream and downstream of the confluence of the site discharge with Flat River. The analytical results for this event are included with this progress report.

   f. During this period, the Ambient Air Monitoring Report for May 2013 was completed. Any issues identified in this report are discussed below. A copy of this document has been sent to your attention.

The May 2013 Ambient Air Monitoring Report noted the following:

- The action levels for lead and dust were not exceeded.
- No samples were taken with the TSP monitors on 05/27/13 due to the holiday.
- No samples were taken with the PM_{10} monitors on 05/28/13 due to the holiday.

3. Developments Anticipated and Work Scheduled for Next Period:

a. Continue analytical sampling and field measurements three times a week. No WET tests are planned.

b. Continue to operate the renovated pilot test.

c. Complete monthly water sampling activities as described in the Removal Action Work Plan.

d. Complete air monitoring activities as described in the Removal Action Work Plan.

e. Continue monitoring the western treatment pond to see that the hydraulics are working properly and evaluate the metals reduction as the pond continues to come online.

f. Begin evaluation of the process for cleaning the old media out of the east pond.

4. Changes in Personnel:

a. None.

5. Issues or Problems Arising This Period:

a. None.

6. Resolution of Issues or Problems Arising This Period:

a. None.

End of Monthly Progress Report

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

August 29, 2013

Amy Sanders
The Doe Run Company
P. O. Box 500
Viburnum, MO 65566

RE: Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60151516

Dear Amy Sanders:
Enclosed are the analytical results for sample(s) received by the laboratory on August 22, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church

jamie.church@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60151516

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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(913)599-5665

SAMPLE SUMMARY

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60151516

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151516001	**RIVERMINES 001**	Water	08/21/13 08:47	08/22/13 08:30
60151516002	**RIVERMINES UPSTREAM**	Water	08/21/13 08:56	08/22/13 08:30
60151516003	**RIVERMINES DOWNSTREAM**	Water	08/21/13 08:37	08/22/13 08:30

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SAMPLE ANALYTE COUNT

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60151516

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60151516001	RIVERMINES 001	EPA 200.7	JGP	3	PASI-K
		SM 2540D	LEM	1	PASI-K
		SM 2540F	LEM	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60151516002	RIVERMINES UPSTREAM	EPA 200.7	JGP	6	PASI-K
		EPA 200.7	JGP	3	PASI-K
		SM 2540D	JML	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60151516003	RIVERMINES DOWNSTREAM	EPA 200.7	JGP	6	PASI-K
		EPA 200.7	JGP	3	PASI-K
		SM 2540D	JML	1	PASI-K
		EPA 300.0	OL	1	PASI-K

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ANALYTICAL RESULTS

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60151516

Sample: RIVERMINES 001 **Lab ID: 60151516001** Collected: 08/21/13 08:47 Received: 08/22/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Cadmium	ND	ug/L	5.0	2.5	1	08/26/13 10:15	08/28/13 11:15	7440-43-9	
Lead	**2.8J**	ug/L	5.0	2.4	1	08/26/13 10:15	08/28/13 11:15	7439-92-1	
Zinc	**19000**	ug/L	50.0	3.3	1	08/26/13 10:15	08/28/13 11:15	7440-66-6	
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	ND	mg/L	5.0	5.0	1		08/23/13 14:59		
2540F Total Settleable Solids	Analytical Method: SM 2540F								
Total Settleable Solids	ND	mL/L/hr	0.20	0.20	1		08/22/20 13:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**835**	mg/L	100	16.0	100		08/26/13 15:50	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60151516

Sample: RIVERMINES UPSTREAM **Lab ID: 60151516002** Collected: 08/21/13 08:56 Received: 08/22/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Cadmium	ND	ug/L	5.0	2.5	1	08/26/13 10:15	08/28/13 11:18	7440-43-9	
Calcium	**43600**	ug/L	100	10.4	1	08/26/13 10:15	08/28/13 11:18	7440-70-2	
Lead	**3.3J**	ug/L	5.0	2.4	1	08/26/13 10:15	08/28/13 11:18	7439-92-1	
Magnesium	**27600**	ug/L	50.0	6.5	1	08/26/13 10:15	08/28/13 11:18	7439-95-4	
Total Hardness by 2340B	**223000**	ug/L	500		1	08/26/13 10:15	08/28/13 11:18		
Zinc	**6.8J**	ug/L	50.0	3.3	1	08/26/13 10:15	08/28/13 11:18	7440-66-6	
200.7 Metals, Dissolved (LF)	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Cadmium, Dissolved	ND	ug/L	5.0	2.5	1	08/24/13 10:25	08/26/13 17:50	7440-43-9	
Lead, Dissolved	ND	ug/L	5.0	2.4	1	08/24/13 10:25	08/26/13 17:50	7439-92-1	
Zinc, Dissolved	**9.8J**	ug/L	50.0	3.3	1	08/24/13 10:25	08/26/13 17:50	7440-66-6	
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	**10.0**	mg/L	5.0	5.0	1		08/27/13 13:32		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**28.3**	mg/L	5.0	0.80	5		08/26/13 12:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60151516

Sample: RIVERMINES DOWNSTREAM **Lab ID: 60151516003** Collected: 08/21/13 08:37 Received: 08/22/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Cadmium	ND	ug/L	5.0	2.5	1	08/26/13 10:15	08/28/13 11:21	7440-43-9	
Calcium	**108000**	ug/L	100	10.4	1	08/26/13 10:15	08/28/13 11:21	7440-70-2	
Lead	**7.6**	ug/L	5.0	2.4	1	08/26/13 10:15	08/28/13 11:21	7439-92-1	
Magnesium	**40500**	ug/L	50.0	6.5	1	08/26/13 10:15	08/28/13 11:21	7439-95-4	
Total Hardness by 2340B	**438000**	ug/L	500		1	08/26/13 10:15	08/28/13 11:21		
Zinc	**2770**	ug/L	50.0	3.3	1	08/26/13 10:15	08/28/13 11:21	7440-66-6	
200.7 Metals, Dissolved (LF)	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Cadmium, Dissolved	ND	ug/L	5.0	2.5	1	08/24/13 10:25	08/26/13 17:59	7440-43-9	
Lead, Dissolved	**2.7J**	ug/L	5.0	2.4	1	08/24/13 10:25	08/26/13 17:59	7439-92-1	
Zinc, Dissolved	**2490**	ug/L	50.0	3.3	1	08/24/13 10:25	08/26/13 17:59	7440-66-6	
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	**8.6**	mg/L	5.0	5.0	1		08/27/13 13:32		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**231**	mg/L	50.0	8.0	50		08/26/13 16:05	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60151516

QC Batch: MPRP/23970 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60151516001, 60151516002, 60151516003

METHOD BLANK: 1242325 Matrix: Water
Associated Lab Samples: 60151516001, 60151516002, 60151516003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium	ug/L	ND	5.0	08/28/13 10:53	
Calcium	ug/L	ND	100	08/28/13 10:53	
Lead	ug/L	ND	5.0	08/28/13 10:53	
Magnesium	ug/L	ND	50.0	08/28/13 10:53	
Total Hardness by 2340B	ug/L	ND	500	08/28/13 10:53	
Zinc	ug/L	ND	50.0	08/28/13 10:53	

LABORATORY CONTROL SAMPLE: 1242326

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	1000	981	98	85-115	
Calcium	ug/L	10000	9980	100	85-115	
Lead	ug/L	1000	1010	101	85-115	
Magnesium	ug/L	10000	9960	100	85-115	
Total Hardness by 2340B	ug/L		65900			
Zinc	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1242327 1242328

Parameter	Units	60151385001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	ug/L	ND	1000	1000	992	991	99	99	70-130	0	10	
Calcium	ug/L	45600	10000	10000	55100	55400	95	98	70-130	1	9	
Lead	ug/L	ND	1000	1000	994	991	99	99	70-130	0	10	
Magnesium	ug/L	5330	10000	10000	15200	15200	99	99	70-130	0	9	
Total Hardness by 2340B	ug/L	136000			200000	201000				0		
Zinc	ug/L	53.8	1000	1000	1070	1070	102	101	70-130	0	11	

MATRIX SPIKE SAMPLE: 1242329

Parameter	Units	60151522001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	2.6J	1000	1020	102	70-130	
Calcium	ug/L	127000	10000	132000	48	70-130	M1
Lead	ug/L	4.6J	1000	989	98	70-130	
Magnesium	ug/L	43100	10000	51100	80	70-130	
Total Hardness by 2340B	ug/L	496000		540000			
Zinc	ug/L	1710	1000	2600	89	70-130	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60151516

QC Batch: MPRP/23964 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60151516002, 60151516003

METHOD BLANK: 1241871 Matrix: Water
Associated Lab Samples: 60151516002, 60151516003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Lead, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Zinc, Dissolved	ug/L	ND	50.0	08/26/13 15:47	

LABORATORY CONTROL SAMPLE: 1241872

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	1000	979	98	85-115	
Lead, Dissolved	ug/L	1000	998	100	85-115	
Zinc, Dissolved	ug/L	1000	994	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241873 1241874

Parameter	Units	60151516002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	ND	1000	1000	982	974	98	97	70-130	1	10	
Lead, Dissolved	ug/L	ND	1000	1000	987	980	99	98	70-130	1	10	
Zinc, Dissolved	ug/L	9.8J	1000	1000	991	976	98	97	70-130	2	11	

MATRIX SPIKE SAMPLE: 1241875

Parameter	Units	60151591001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	ND	1000	1000	100	70-130	
Lead, Dissolved	ug/L	ND	1000	954	95	70-130	
Zinc, Dissolved	ug/L	ND	1000	1000	99	70-130	

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QUALITY CONTROL DATA

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60151516

QC Batch: WET/43037 Analysis Method: SM 2540D
QC Batch Method: SM 2540D Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 60151516001

METHOD BLANK: 1241325 Matrix: Water
Associated Lab Samples: 60151516001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/23/13 14:56	

SAMPLE DUPLICATE: 1241326

Parameter	Units	60151613001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	7.0	9.0	25	25	

SAMPLE DUPLICATE: 1241327

Parameter	Units	60151533008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	18.0	17.0	6	25	

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60151516

QC Batch: WET/43075 Analysis Method: SM 2540D
QC Batch Method: SM 2540D Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 60151516002, 60151516003

METHOD BLANK: 1243041 Matrix: Water
Associated Lab Samples: 60151516002, 60151516003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/27/13 13:30	

SAMPLE DUPLICATE: 1243042

Parameter	Units	60151648001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	12.0	10	18	25	

SAMPLE DUPLICATE: 1243043

Parameter	Units	60151528001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	131	131	0	25	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60151516

QC Batch: WETA/25939 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60151516001, 60151516002, 60151516003

METHOD BLANK: 1242295 Matrix: Water
Associated Lab Samples: 60151516001, 60151516002, 60151516003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	08/26/13 11:38	

LABORATORY CONTROL SAMPLE: 1242296

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.8	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1242297 1242298

Parameter	Units	60151085001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	ND	250	250	287	289	100	101	61-119	1	10	

MATRIX SPIKE SAMPLE: 1242299

Parameter	Units	60151516002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	28.3	25	56.8	114	61-119	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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QUALIFIERS

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60151516

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60151516

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151516001	RIVERMINES 001	EPA 200.7	MPRP/23970	EPA 200.7	ICP/18752
60151516002	RIVERMINES UPSTREAM	EPA 200.7	MPRP/23970	EPA 200.7	ICP/18752
60151516003	RIVERMINES DOWNSTREAM	EPA 200.7	MPRP/23970	EPA 200.7	ICP/18752
60151516002	RIVERMINES UPSTREAM	EPA 200.7	MPRP/23964	EPA 200.7	ICP/18749
60151516003	RIVERMINES DOWNSTREAM	EPA 200.7	MPRP/23964	EPA 200.7	ICP/18749
60151516001	RIVERMINES 001	SM 2540D	WET/43037		
60151516002	RIVERMINES UPSTREAM	SM 2540D	WET/43075		
60151516003	RIVERMINES DOWNSTREAM	SM 2540D	WET/43075		
60151516001	RIVERMINES 001	SM 2540F	WET/43016		
60151516001	RIVERMINES 001	EPA 300.0	WETA/25939		
60151516002	RIVERMINES UPSTREAM	EPA 300.0	WETA/25939		
60151516003	RIVERMINES DOWNSTREAM	EPA 300.0	WETA/25939		

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Sample Condition Upon Receipt

WO#: 60151516

60151516

Client Name: Doe Run

Optional
Proj Due Date:
Proj Name:

Courier: Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐

Tracking #: 7965 1143 5594 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☑ ZPLC

Thermometer Used: T-112 / T-194 Type of Ice: (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.1 Date and Initials of person examining contents: 8-22-13 BA

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	1.	
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2.	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.	
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.	
Short Hold Time analyses (<72hr):	☑Yes ☐No ☐N/A	6. Soil Soil	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.	
Sufficient volume:	☑Yes ☐No ☐N/A	8.	
Correct containers used:	☑Yes ☐No ☐N/A		
Pace containers used:	☑Yes ☐No ☐N/A	9.	
Containers intact:	☑Yes ☐No ☐N/A	10.	
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.	
Filtered volume received for dissolved tests?	☐Yes ☑No ☐N/A	12.	
Sample labels match COC:	☑Yes ☐No ☐N/A		
Includes date/time/ID/analyses Matrix: WT		13.	
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A		
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	14.	
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐Yes ☑No	initial when completed	Lot # of added preservative
Trip Blank present:	☐Yes ☐No ☑N/A		
Pace Trip Blank lot # (if purchased):		15.	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A		
		16.	
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ 8/22/13 Date: _____

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical
www.pacelabs.com

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A — Required Client Information:

Company:	The Doe Run Company
Address:	PO Box 500
	Viburnum, MO 65566
Email To:	asanders@doerun.com
Phone:	573-689-4535
Fax:	573-244-8179
Requested Due Date/TAT:	5 - 7 Days

Section B — Required Project Information:

Report To:	Amy Sanders
Copy To:	
Purchase Order No.:	
Project Name:	NPDES Monthly (Rivermines)
Project Number:	

Section C — Invoice Information:

Attention:	Amy Sanders
Company Name:	The Doe Run Company
Address:	PO Box 500, Viburnum, MO 65566
Pace Quote Reference:	
Pace Project Manager:	Jamie Church
Pace Profile #:	

REGULATORY AGENCY

- [ ] NPDES
- [ ] GROUND WATER
- [ ] DRINKING WATER
- [ ] UST
- [ ] RCRA
- [x] OTHER

Site Location STATE: MO

Section D — Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
	WP
	AR
	OT
	TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

Pace Project No./Lab I.D.: 60151516

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	↓Analysis Test↓ (Y/N)	TSS (N)	Settleable Solids (N)	Sulfate (N)	Cd, Pb, Zn - Total (N)	Hardness (N)	Cd, Pb, Zn - Dissolved (N)	Residual Chlorine (Y/N)	Pace Project No./Lab I.D.
1	Rivermines 001	WW	G			8/21/13	0847	66	3	2		1							X	X	X	X			N	18P1U 18P3H 18P3N1,5 001
2	Rivermines Upstream	W	G			8/21/13	0856	74	2	1		1							X		X	X	X	X	N	↓ ↓ 002
3	Rivermines Downstream	W	G			8/21/13	0837	72	2	1		1							X		X	X	X	X	N	003
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
* 200.8 Total Recoeverable Metals	Larry Hopkins (signature)	8/21/13	1200	(signature) / PACE	8-22-13	0830	2.1	Y	Y	Y
**analyzed within 24 hours with flagged data										
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Larry Hopkins

SIGNATURE of SAMPLER: (signature)

DATE Signed (MM/DD/YY): 8/21/13

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007